Abstract

Techniques are disclosed for generating a representation of an access control list, the representation being utilizable in a network processor or other type of processor to perform packet filtering or other type of access control list based function. A plurality of rules of the access control list are determined, each of at least a subset of the rules having a plurality of fields and a corresponding action. The rules are processed to generate a multi-level tree representation of the access control list, in which each of one or more of the levels of the tree representation is associated with a corresponding one of the fields. At least one level of the tree representation comprises a plurality of nodes, with two or more of the nodes of that level having a common subtree, and the tree representation including only a single copy of that subtree. The tree representation is characterizable as a directed graph in which each of the two nodes having the common subtree points to the single copy of the common subtree.